What is claimed, is:

Claims

1. A method for determining a characteristic value for the perfusion of modified tissue regions in organs of living beings, having the following steps:

   a) determining a first volumetric flow rate of the blood by means of laser flowmetry at a first measurement point within the modified tissue region as a first measurement profile of a volumetric flow rate signal as a function of time;

   b) determining a second volumetric flow rate of the blood by means of laser flowmetry at a second measurement point within an unmodified tissue region as a second measurement profile of a volumetric flow rate signal as a function of time;

   c) carrying out a wavelet analysis of each of the measurement profiles as a three-dimensional representation of the signal intensity over a frequency or scaling axis and time;

   d) determining the profile of a vasomotion energy over the frequency or scaling axis for each of the measurement profiles subjected to the wavelet analysis, the vasomotion energy being the integral of the signal intensity with respect to time for a particular frequency or scaling value;

e) subtracting the profile of the vasomotion energy of the second measurement profile from the profile of the vasomotion energy of the first measurement profile, so as to form a first difference profile;

f) integrating the difference profile in order to obtain the characteristic value.

2. A method for determining a characteristic value for the perfusion of modified tissue regions in organs of living beings, having the following steps:

a) determining a first volumetric flow rate of the blood by means of laser flowmetry at a first measurement point within the modified tissue region as a first measurement profile of a volumetric flow rate signal as a function of time;

b) determining a second volumetric flow rate of the blood by means of laser flowmetry at a second measurement point within an unmodified tissue region as a second measurement profile of a volumetric flow rate signal as a function of time;

c) determining a third volumetric flow rate of the blood by means of laser flowmetry at a third measurement point at the transition between the modified tissue region and the surrounding, unmodified tissue region as a third measurement profile of a volumetric flow rate signal as a function of time;

d) carrying out a wavelet analysis of each of the measurement profiles as a three-dimensional representation of the signal intensity over a frequency or scaling axis and time;

e) determining the profile of a vasomotion energy over the frequency or scaling axis for each of the measurement profiles subjected to the wavelet analysis, the vasomotion energy being the integral of the signal intensity with respect to time for a particular frequency or scaling value;

f) subtracting the profile of the vasomotion energy of the third measurement profile from the profile of the vasomotion energy of the second measurement profile, so as to form a first difference profile;

g) subtracting the profile of the vasomotion energy of the first measurement profile from the profile of the vasomotion energy of the second measurement profile, so as to form a second difference profile;

h) forming an average value of the first and second difference profiles;

i) integrating the average value in order to obtain the characteristic value.

3. The method of claim 1, wherein the characteristic value is compared with a reference value.

4. The method of claim 2, wherein the characteristic value is compared with a reference value.

5. The method of claim 1, wherein the first measurement point is located in a pigmented tissue region.

6. The method of claim 2, wherein the first measurement point is located in a pigmented tissue region.

7. The method of claim 1, wherein the tissue regions are regions of the skin of the living being.

8. The method of claim 2, wherein the tissue regions are regions of the skin of the living being.

9. A device for determining a characteristic value for the perfusion of modified tissue regions in organs of living beings, having:

a) a laser flowmeter for determining

- a first volumetric flow rate of the blood at a first measurement point within the modified tissue region as a first measurement profile of a volumetric flow rate signal as a function of time;

- a second volumetric flow rate of the blood at a second measurement point within an unmodified tissue region as a second measurement profile of

a volumetric flow rate signal as a function of time;

b) means for carrying out a wavelet analysis of each of the measurement profiles as a three-dimensional representation of the signal intensity over a scaling axis and time;

c) means for determining the profile of a vasomotion energy over the frequency or scaling axis for each of the measurement profiles subjected to the wavelet analysis, the vasomotion energy being the integral of the signal intensity with respect to time for a particular frequency or scaling value;

d) means for subtracting the profile of the vasomotion energy of the first measurement profile from the profile of the vasomotion energy of the second measurement profile, so as to form a first difference profile;

e) means for integrating the difference profile in order to obtain the characteristic value.

10. A device for determining a characteristic value for the perfusion of modified tissue regions in organs of living beings, having:

a) a laser flowmeter for determining

- a first volumetric flow rate of the blood at a first measurement point within the modified tissue region as a first measurement profile of a volumetric flow rate signal as a function of time;

- a second volumetric flow rate of the blood at a second measurement point within an unmodified tissue region as a second measurement profile of a volumetric flow rate signal as a function of time;

- a third volumetric flow rate of the blood at a third measurement point at the transition between the modified tissue region and the surrounding, unmodified tissue region as a third measurement profile of a volumetric flow rate signal as a function of time;

b) means for carrying out a wavelet analysis of each of the measurement profiles as a three-dimensional representation of the signal intensity over a frequency or scaling axis and time;

c) means for determining the profile of a vasomotion energy over the frequency or scaling axis for each of the measurement profiles subjected to the wavelet analysis, the vasomotion energy being the integral of the signal intensity with respect to time for a particular frequency or scaling value;

d) means for subtracting the profile of the vasomotion energy of the third measurement profile from the profile of the vasomotion energy of the second measurement profile, so as to form a first difference profile;

e) means for subtracting the profile of the vasomotion energy of the first measurement profile from the profile of the vasomotion energy of the second measurement profile, so as to form a second difference profile;

f) means for forming an average value of the first and second difference profiles;

g) means for integrating the average value in order to obtain the characteristic value.

11. The device of claim 9, having means for comparing the characteristic value with a reference value.

12. The device of claim 10, having means for comparing the characteristic value with a reference value.

13. The device of claim 9, wherein the first measurement point is located in the pigmented tissue region.

14. The device of claim 10, wherein the first measurement point is located in the pigmented tissue region.

15. The device of claim 9, wherein the tissue regions are regions of the skin of the living being.

16. The device of claim 10, wherein the tissue regions are regions of the skin of the living being.